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CORONARY ARTERY BYPASS GRAFTING WITH CONCOMITANT CARDIAC RESYNCHRONIZATION THERAPY IN PATIENTS WITH ISCHEMIC HEART FAILURE AND LEFT VENTRICULAR DYSSYNCHRONY: RESULTS FROM A MULTICENTER STUDY

ACC Oral Contributions
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Background: Epicardial implantation of cardiac resynchronization therapy (CRT) system during coronary artery bypass grafting (CABG) may be an additional treatment method, which will lead to an improvement of left ventricle (LV) systolic function and dyssynchrony in patients with ischemic heart failure. The purpose of this prospective multicenter study was to compare the long-term results in patients with severe ischemic heart failure, undergoing CABG alone or CABG combined with concomitant epicardial implantation of a CRT system.

Methods: One hundred and seventy eight consecutive patients with severe ischemic heart failure and LV dyssynchrony were enrolled in two groups: CABG alone (n=87) and epicardial CRT implantation during CABG (n=91). This study, which was prospective, randomized, and single-blind, was designed to compare clinical and echocardiography data at 6, 12 and 18 months of follow up.

Results: In CABG-group patients LV systolic function, dyssynchrony signs and quality of life did not change significantly post-CABG compared to pre-CABG data. On the contrary, in the CABG+CRT group more patients improved by two NYHA classes ($p<0.001$), had a longer 6-minute walk test distance ($p<0.001$) and better quality of life ($p<0.001$) compared with the CABG group. Echocardiography revealed an improved LV ejection fraction ($p<0.001$), smaller LV end-systolic volume ($p=0.06$), and improved LV synchrony in the CABG+CRT group compared with the CABG group. In CABG group 23 patients (26.4%) died at 18 month follow up compared with 9 (9.9%) in CABG+CRT group (Log-Rank test, $p=0.006$). In Cox regression analysis, LV dyssynchrony [HR 2.634 (1.206-5.751), P = 0.015] was identified as the independent predictor of all-cause death and heart failure hospitalization.

Conclusions: For majority of the patients with ischemic heart failure and evidence of LV dyssynchrony, CABG neither eliminates dyssynchrony nor improves systolic function. Epicardial implantation of a CRT system concomitant with CABG facilitates patient management in the early post-operative period, improves LV systolic function and quality of life, and is associated with low mortality in long-term follow up.